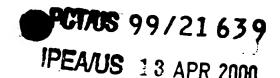
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## **CLAIMS**

What is claimed is:

1. An aluminum based alloy, said alloy comprising:

1.0 - 2.0% by weight manganese;

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a maximum of 0.6% by weight iron;

less than 0.003% by weight beryllium;

the remainder being aluminum and

said alloy characterized by reduced die soldering when used in die

casting operations.

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2. The aluminum alloy of claim 1 further comprising 2.5 - 4.0% by weight magnesium and 0.001-0.003% by weight beryllium and said alloy characterized by an elongation value of at least 17%.

3. The aluminum allow of claim 2 further comprising a maximum of 0.45% by weight silicon.

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4. The aluminum alloy of claim 3 further comprising a maximum of 0.10% by weight copper.

5. The aluminum alloy of claim 1 further comprising a maximum of 0.45% by weight silicon and said alloy characterized by an elongation value of at least 17%.

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6. The aluminum alloy of claim 5 further comprising 2.5 - 4.0% by weight magnesium.

7. The aluminum alloy of claim 1 further comprising less than 1.75% by weight magnesium.

8. The aluminum alloy of claim 7 further comprising a maximum of 0.10% by weight zinc.

9. The aluminum alloy of claim 7 further comprising a maximum of 0.2% by weight titanium.

10. The aluminum alloy of claim 8 further 4.2 - 5.0% by weight

Copper

11. The aluminum alloy of claim 8 further a maximum of 0.2% by

weight copper.

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	12.	An aluminum based all	y for use in forming a die cast product,
said alloy having an elongation value of at least 17%, said alloy comprising			
	2.5 - 4	.0% by weight magnesiu	m·

2.5 - 4.0% by weight magnesjum;

1.0 - 2.0% by weight mangahese;

0.25 - 0.6% by weight iron;

0.2 - 0.45% by weight silicon;

less than 0.003% by weight beryllium;

the remainder being aluminum.

13. The aluminum alloy of claim 12 further comprising 0.05 - 0.10% by weight copper.

14. The aluminum alloy of claim 13 further comprising a maximum of 0.10% by weight zinc.

15. A modified de-castable aluminum alloy which in its
unmodified form includes iron in a certain percentage by weight to at least reduce mold soldering and manganese in a lower percentage by weight than the iron comprising:

a maximum of 0.6% by weight iron; and manganese in a percent by weight higher than the percentage by weight

20 of iron.

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- 16. The aluminum alloy of claim 15 wherein the manganese is present at 1.0 2.0% percent by weight.
- 17. The aluminum alloy of claim 15 wherein the manganese is present in a percent by weight higher than the certain percent by weight of iron in the unmodified form of the alloy.
- 18. The aluminum alloy of claim 15 wherein the manganese is present at about 1.0% percent by weight.
- 19. A structural article of manufacture comprising an aluminum alloy having a yield strength of greater than or equal to 11.95 kgf/mm² and an elongation value of greater than or equal to 18%, said aluminum alloy comprising
  - 2.5 4.0% by weight magnesium;
  - 1.0 2.0% by weight manganese;

ANAMOED SHEET

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a maximum of 0.6% by weight iron;

a maximum of 0.45% by weight silicon;

a maximum of 0.10% by weight copper;

less than 0.003% by weight beryllium;

the remainder being aluminum.

The article of claim 16 wherein the aluminum alloy includes about 1.1% manganese by weight.

> 21. A die-castable aluminum alloy comprising:

0.25-0.70% by Weight magnesium

1.0 - 2.0% by weight manganese;

a maximum/of 0.2% by weight iron;

6.5-7.5% by weight silicon;

a maximum of 0.2% by weight each of additional elements selected from the group, of zinc, copper, titanium and beryllium;

the remainder being aluminum; and

said alloy characterized by reduced die soldering when used in die casting operations.

22. The alloy of claim 21 in which a maximum of 0.1% by weight zinc is present as an additional element.

23. The alloy of claim 22 in which a maximum of 0.2% by weight copper is present as an additional element.

24. The alloy of claim 23 in which a maximum of 0.2% by weight titanium is present as an additional element.

> 25. The alloy of claim 24 in which magnesium is present at 0.25-

25 0.45% by weight.

> The alloy of claim 24 in which 0.04-0.07 by weight beryllium 26. is present as an additional element.

> > 27. The alloy of claim 25 in which magnesium is present at 0.4-

0.7% by weight.

A die-castable aluminum alloy comprising: 28.

0.15-0.35% by weight magnesium

1.0/- 2.0% by weight manganese;

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a maximum of 0.1% by weight iron;

4.2-5.0% by weight ¢opper;

a maximum of 0.2% by weight each of additional elements selected from the group of zinc, silicon, nickel, tin, and titanium;

the remainder being aluminum; and

said alloy characterized by reduced die soldering when used in die casting operations.

- The allow of claim 28 in which a maximum of 0.1% by weight 29. zinc is present as an additional element.
- 10 30. The alloy of claim 29 in which a maximum of 0.05% by weight silicon is present as an additional element.
  - 31. The alloy of claim 30 in which a maximum of 0.2% by weight titanium is present as an additional element.
- A method of producing components by die casting an 15 aluminum alloy with reduced die soldering, the method comprising the steps of: providing an aluminum alloy having magnesium, zinc, silicon, copper, beryllium, titanium, nickel, and tin present in percentages by weight consistent with a known aluminum alloy;

maintaining the iron content of the provided alloy at or below the iron,

20 content of the known aluminum alloy;

32.

adjusting the manganese content of the alloy to between 1.0-2.0% by

weight;

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heating the alloy to a temperature conducive to die casting:

casting a component from the alloy; and

removing the cast component from the die.